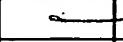
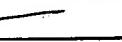
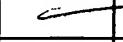
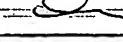
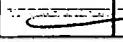
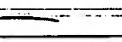


INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)			ATTY. DOCKET NO. 7720/FPS/MMCS/APC	SERIAL NO. 10/632,107		
			APPLICANT Alexander T. SCHWARM et al.			
			FILING DATE August 1, 2003	GROUP 2812		
U.S. PATENT DOCUMENTS						
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	4,957,605	09/18/90	Hurwitt et al.			04/17/89
	5,240,552	08/31/93	Yu et al.			12/11/91
	5,369,544	11/29/94	Mastrangelo			04/05/93
	5,444,837	08/22/95	Bomans et al.			12/29/93
	5,665,214	09/09/97	Iturralde			05/03/95
	5,695,810	12/09/97	Dubin et al.			11/20/96
	5,824,599	10/20/98	Schacham-Diamond et al.			01/16/96
	5,825,356	10/20/98	Habib et al.			03/18/96
	5,831,851	11/03/98	Eastburn et al.			03/21/95
	5,838,951	11/17/98	Song			08/28/96
	5,859,777	01/12/99	Yokoyama et al.			05/13/97
	5,871,805	02/16/99	Lemelson			04/08/96
	5,943,550	08/24/99	Fulford, Jr. et al.			03/29/96
	6,012,048	01/04/00	Gustin et al.			05/30/97
	6,037,664	03/14/00	Zhao et al.			03/31/98
	6,059,636	05/09/00	Inaba et al.			07/09/98
	6,096,649	08/01/00	Jang			10/25/99
	6,100,195	08/08/00	Chan et al.			12/28/98
	6,114,238	09/05/00	Liao			05/20/98
	6,150,270	11/21/00	Matsuda et al.			01/07/99
	6,157,864	12/05/00	Schwenke et al.			05/08/98
	6,181,013 B1	01/30/01	Liu et al.			03/13/00
	6,212,961 B1	04/10/01	Dvir			02/11/99
	6,226,563 B1	05/01/01	Lim			09/04/98
	6,228,280 B1	05/08/01	Li et al.			05/06/98
	6,237,050 B1	05/22/01	Kim et al.			09/04/98
	2001/0006873 A1	07/05/01	Moore			02/13/01
	6,259,160 B1	07/10/01	Lopatin et al.			04/21/99
	6,281,127 B1	08/28/01	Shue			04/15/99
EXAMINER			DATE CONSIDERED 8/10/04			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)			ATTY. DOCKET NO. 7720/FPS/MMCS/APC	SERIAL NO. 10/632,107		
			APPLICANT Alexander T. SCHWARM et al.			
			FILING DATE August 1, 2003		GROUP 2812	
U.S. PATENT DOCUMENTS						
EXAMINER'S INITIALS	PATENT NO.	DATE	NAME	CLASS	SUBCLASS	FILING DATE
	6,317,643 B1	11/13/01	Dmochowski			03/31/99
	6,339,727 B1	01/15/02	Ladd			12/21/98
	6,355,559 B1	03/12/02	Havemann et al.			11/03/00
	6,391,780 B1	05/21/02	Shih et al.			08/23/99
	6,417,014 B1	07/09/02	Lam et al.			10/19/99
	6,427,093 B1	07/30/02	Toprac			10/07/99
	6,432,728 B1	08/13/02	Tai et al.			10/16/00
	6,449,524 B1	09/10/02	Miller et al.			01/04/00
	6,455,415 B1	09/24/02	Lopatin et al.			04/16/01
	2002/0165636 A1	11/07/02	Hasan			04/24/02
	6,484,064 B1	11/19/02	Campbell			10/05/99
	6,495,452 B1	12/17/02	Shih			08/18/99
	2002/0193899 A1	12/19/02	Shanmugasundram et al.			05/01/02
	2003/0017256 A1	01/23/03	Shimane			06/12/02
	6,515,368 B1	02/04/03	Lopatin et al.			12/07/01
	6,517,414 B1	02/11/03	Tobin et al.			03/10/00
	6,528,409 B1	03/04/03	Lopatin et al.			04/29/02
	6,537,912 B1	03/25/03	Agarwal			08/25/00
	6,580,958 B1	06/17/03	Takano			11/22/99
	6,605,549 B2	08/12/03	Leu et al.			09/29/01
	6,607,976 B2	08/19/03	Chen et al.			09/25/01
	6,609,946 B1	08/26/03	Tran			07/14/00
	6,616,513 B1	09/09/03	Osterheld			04/05/01
	6,624,075 B1	09/23/03	Lopatin et al.			11/05/02
	6,630,741 B1	10/07/03	Lopatin et al.			12/07/01
	6,660,633 B1	12/09/03	Lopatin et al.			02/26/02
	6,708,074 B1	03/16/04	Chi et al.			08/11/00
	6,708,075 B2	03/16/04	Sonderman et al.			11/16/01
	6,728,587 B2	04/27/04	Goldman et al.			12/27/00
EXAMINER			DATE CONSIDERED			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)			ATTY. DOCKET NO. 7720/FPS/MMCS/APC	SERIAL NO. 10/632,107								
			APPLICANT Alexander T. SCHWARM et al.									
			FILING DATE August 1, 2003	GROUP 2812								
FOREIGN PATENT DOCUMENTS												
EXAMINER'S INITIALS	PATENT NO.	DATE	COUNTRY	CLASS	SUBCLASS	Translation						
						Yes	No					
							EP 0 932 195 A1	07/28/99	EP			X
							EP 1 083 470 A2	03/14/01	EP			X
	GB-2-365-215-A	02/13/02	GB			X						
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)												
 Sun, S.C. 1998. "CVD and PVD Transition Metal Nitrides as Diffusion Barriers for Cu Metallization." <i>IEEE</i> . pp. 243-246.												
 Tagami, M., A. Furuya, T. Onodera, and Y. Hayashi. 1999. "Layered Ta-nitrides (LTN) Barrier Film by Power Swing Sputtering (PSS) Technique for MOCVD-Cu Damascene Interconnects." <i>IEEE</i> . pp. 635-638.												
 Yamagishi, H., Z. Tokei, G.P. Beyer, R. Donaton, H. Bender, T. Nogami, and K. Maex. 2000. "TEM/SEM Investigation and Electrical Evaluation of a Bottomless I-PVD TA(N) Barrier in Dual Damascene" (Abstract). <i>Advanced Metallization Conference 2000</i> . San Diego, CA.												
 Eisenbraun, Eric, Oscar van der Straten, Yu Zhu, Katharine Dovidenco, and Alain Kaloyeros. 2001. "Atomic Layer Deposition (ALD) of Tantalum-Based Materials for Zero Thickness Copper Barrier Applications" (Abstract). <i>IEEE</i> . pp. 207-209.												
 Smith, S.R., K.E. Elers, T. Jacobs, V. Blaschke, and K. Pfeifer. 2001. "Physical and Electrical Characterization of ALD Tin Used as a Copper Diffusion Barrier in 0.25 mum, Dual Damascene Backend Structures" (Abstract). <i>Advanced Metallization Conference 2001</i> . Montreal, Quebec.												
 Kim, Y.T. and H. Sim. 2002. "Characteristics of Pulse Plasma Enhanced Atomic Layer Deposition of Tungsten Nitride Diffusion Barrier for Copper Interconnect" (Abstract). <i>IEIC Technical Report</i> . Vol. 102, No. 178, pp. 115-118.												
 Elers, Kai-Erik, Ville Saanila, Pekka J. Soininen, Wei-Min Li, Juhana T. Kostamo, Suvi Haukka, Jyrki Juhanoja, and Wim F.A. Besling. 2002. "Diffusion Barrier Deposition on a Copper Surface by Atomic Layer Deposition" (Abstract). <i>Advanced Materials</i> . Vol. 14, No. 13-14, pp. 149-153.												
 Peng, C.H., C.H. Hsieh, C.L. Huang, J.C. Lin, M.H. Tsai, M.W. Lin, C.L. Chang, Winston S. Shue, and M.S. Liang. 2002. "A 90nm Generation Copper Dual Damascene Technology with ALD TaN Barrier." <i>IEEE</i> . pp. 603-606.												
 Van der Straten, O., Y. Zhu, E. Eisenbraun, and A. Kaloyeros. 2002. "Thermal and Electrical Barrier Performance Testing of Ultrathin Atomic Layer Deposition Tantalum-Based Materials for Nanoscale Copper Metallization." <i>IEEE</i> . pp. 188-190.												
 Wu, Z.C., Y.C. Lu, C.C. Chiang, M.C. Chen, B.T. Chen, G.J. Wang, Y.T. Chen, J.L. Huang, S.M. Jang, and M.S. Liang. 2002. "Advanced Metal Barrier Free Cu Damascene Interconnects with PECVD Silicon Carbide Barriers for 90/65-nm BEOL Technology." <i>IEEE</i> . pp. 595-598.												
 July 25, 2003. International Search Report for PCT/US02/24858.												
 March 30, 2004. Written Opinion for PCT/US02/19062.												
 April 9, 2004. Written Opinion for PCT/US02/19116.												
 April 22, 2004. Office Action for U.S. Serial No. 09/998,372, filed November 30, 2001.												
EXAMINER			DATE CONSIDERED									
			 31/01/04									

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)				ATTY. DOCKET NO. 7720/FPS/MMCS/APC	SERIAL NO. 10/632,107		
				APPLICANT Alexander T. SCHWARM et al.			
				FILING DATE August 1, 2003	GROUP 2812		
U.S. PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT APP. NO.	FILING DATE	NAME	TITLE		CLASS	SUB-CLASS
	09/363,966	07/29/99	Arackaparambil et al.	Computer Integrated Manufacturing Techniques			
	09/469,227	12/22/99	Somekh et al.	Multi-Tool Control System, Method and Medium			
	09/619,044	07/19/00	Yuan	System and Method of Exporting or Importing Object Data in a Manufacturing Execution System			
	09/637,620	08/11/00	Chi et al.	Generic Interface Builder			
	09/656,031	09/06/00	Chi et al.	Dispatching Component for Associating Manufacturing Facility Service Requestors with Service Providers			
	09/655,542	09/06/00	Yuan	System, Method and Medium for Defining Palettes to Transform an Application Program Interface for a Service			
	09/725,908	11/30/00	Chi et al.	Dynamic Subject Information Generation in Message Services of Distributed Object Systems			
	09/800,980	03/08/01	Hawkins et al.	Dynamic and Extensible Task Guide			
	09/811,667	03/20/01	Yuan et al.	Fault Tolerant and Automated Computer Software Workflow			
	09/927,444	08/13/01	Ward et al.	Dynamic Control of Wafer Processing Paths in Semiconductor Manufacturing Processes			
	09/928,473	08/14/01	Koh	Tool Services Layer for Providing Tool Service Functions in Conjunction with Tool Functions			
	09/928,474	08/14/01	Krishnamurthy et al.	Experiment Management System, Method and Medium			
	09/943,383	08/31/01	Shanmugasundram et al.	In Situ Sensor Based Control of Semiconductor Processing Procedure			
	09/943,955	08/31/01	Shanmugasundram et al.	Feedback Control of a Chemical Mechanical Polishing Device Providing Manipulation of Removal Rate Profiles			
	09/998,372	11/30/01	Paik	Control of Chemical Mechanical Polishing Pad Conditioner Directional Velocity to Improve Pad Life			
	09/998,384	11/30/01	Paik	Feedforward and Feedback Control for Conditioning of Chemical Mechanical Polishing Pad			
EXAMINER				DATE CONSIDERED 3/10/04			

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)				ATTY. DOCKET NO. 7720/FPS/MMCS/APC	SERIAL NO. 10/632,107		
				APPLICANT Alexander T. SCHWARM et al.			
				FILING DATE August 1, 2003	GROUP 2812		
U.S. PATENT DOCUMENTS							
EXAMINER'S INITIALS	PATENT APP. NO.	FILING DATE	NAME	TITLE		CLASS	SUB-CLASS
	10/084,092	02/28/02	Arackaparambil et al.	Computer Integrated Manufacturing Techniques			
	10/100,184	03/19/02	Al-Bayati et al.	Method, System and Medium for Controlling Semiconductor Wafer Processes Using Critical Dimension Measurements			
	10/135,405	05/01/02	Reiss et al.	Integration of Fault Detection with Run-to-Run Control			
	10/135,451	05/01/02	Shanmugasundram et al.	Dynamic Metrology Schemes and Sampling Schemes for Advanced Process Control in Semiconductor Processing			
	10/172,977	06/18/02	Shanmugasundram et al.	Method, System and Medium for Process Control for the Matching of Tools, Chambers and/or Other Semiconductor-Related Entities			
	10/173,108	06/18/02	Shanmugasundram et al.	Integrating Tool, Module, and Fab Level Control			
	10/174,370	06/18/02	Shanmugasundram et al.	Feedback Control of Plasma-Enhanced Chemical Vapor Deposition Processes			
	10/174,377	06/18/02	Schwarm et al.	Feedback Control of Sub-Atmospheric Chemical Vapor Deposition Processes			
	10/377,654	03/04/03	Kokotov et al.	Method, System and Medium for Controlling Manufacturing Process Using Adaptive Models Based on Empirical Data			
	10/393,531	03/21/03	Shanmugasundram et al.	Copper Wiring Module Control			
EXAMINER 	DATE CONSIDERED  3/10/04						

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

INFORMATION DISCLOSURE CITATION IN AN APPLICATION (PTO-1449)		ATTY. DOCKET NO. 7720/FPS/MMCS/APC	SERIAL NO. 10/632,107
		APPLICANT Alexander T. SCHWARM et al.	
		FILING DATE August 1, 2003	GROUP 2812
OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)			
Q	March 5, 2001. "KLA-Tencor Introduces First Production-worthy Copper CMP In-situ Film Thickness and End-point Control System." http://www.kla-tencor.com/j/servlet/NewsItem?newsItemID=74 .		
Q	Lee, Brian, Duane S. Boning, Winthrop Baylies, Noel Poduje, Pat Hester, Yong Xia, John Valley, Chris Koliopoulos, Dale Hetherington, HongJiang Sun, and Michael Lacy. April 2001. "Wafer Nanotopography Effects on CMP: Experimental Validation of Modeling Methods." San Francisco, California: Materials Research Society Spring Meeting.		
Q	Tobin, K. W., T. P. Karnowski, L. F. Arrowood, and F. Lakhani. April 2001. "Field Test Results of an Automated Image Retrieval System (Abstract)." <i>Advanced Semiconductor Manufacturing Conference, 2001 IEEE/SEMI</i> , Munich, Germany.		
Q	Tan, K. K., H. F. Dou, and K. Z. Tang. May-June 2001. "Precision Motion Control System for Ultra-Precision Semiconductor and Electronic Components Manufacturing (Abstract)." <i>51st Electronic Components and Technology Conference 2001. Proceedings</i> , pp. 1372-1379. Orlando, Florida.		
Q	Jensen, Alan, Peter Renteln, Stephen Jew, Chris Raeder, and Patrick Cheung. June 2001. "Empirical-Based Modeling for Control of CMP Removal Uniformity." <i>Solid State Technology</i> , Vol. 44, No. 6, pp. 101-102, 104, 106. Cowan Publ. Corp.: Washington, D.C.		
Q	July 5, 2001. "Motorola and Advanced Micro Devices Buy ObjectSpace Catalyst Advanced Process Control Product for Five Wafer Fabs." <i>Semiconductor FABTECH</i> . www.semiconductorfabtech.com/industry.news/9907/20.07.shtml		
Q	Heuberger, U. September 2001. "Coating Thickness Measurement with Dual-Function Eddy-Current & Magnetic Inductance Instrument (Abstract)." <i>Galvanotechnik</i> , vol. 92, no. 9, pp. 2354-2366+IV.		
Q	Pilu, Maurizio. September 2001. "Undoing Page Curl Distortion Using Applicable Surfaces." <i>IEEE International Conference on Image Processing</i> . Thessalonica, Greece.		
Q	October 15, 2001. Search Report prepared by the Austrian Patent Office for Singapore Patent Application No. 200004286-1.		
Q	NovaScan 2020. February 2002. "Superior Integrated Process Control for Emerging CMP High-End Applications."		
Q	March 15, 2002. Office Action for U.S. Serial No. 09/469,227, filed December 22, 1999.		
Q	March 29, 2002. Office Action for U.S. Serial No. 09/363,966, filed July 29, 1999.		
Q	Moyne, J., V. Solakhian, A. Yershov, M. Anderson, and D. Mockler-Hebert. April-May 2002. "Development and Deployment of a Multi-Component Advanced Process Control System for an Epitaxy Tool (Abstract)." <i>2002 IEEE Advanced Semiconductor Manufacturing Conference and Workshop</i> , pp. 125-130.		
Q	Sarfaty, Moshe, Arulkumar Shanmugasundram, Alexander Schwarm, Joseph Paik, Jimin Zhang, Rong Pan, Martin J. Seamons, Howard Li, Raymond Hung, and Suketu Parikh. April-May 2002. "Advance Process Control Solutions for Semiconductor Manufacturing." Boston, Massachusetts: <i>13th Annual IEEE/SEMI Advanced Semiconductor Manufacturing Conference. Advancing the Science and Technology of Semiconductor Manufacturing</i> . ASMC 2002, pp. 101-106.		
EXAMINER	DATE CONSIDERED 8/27/04		

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.